Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-10. (Canceled)

11.   (Currently amended) A method of scheduling cable modems ~~using virtual upstream channels~~ in a broadband communications system, comprising:

~~segregating a transmission area reserved for said virtual upstreams according to a first set of constraints;~~

receiving ~~providing~~ bandwidth allocation requests ~~request messages~~ from the cable modems ~~to said system~~;

converting each of the ~~said~~ bandwidth allocation requests ~~request messages to a unified form~~ into a mini-slot size based on a modulation and symbol rate associated with the bandwidth allocation requests; and

scheduling transmission on a physical upstream channel from cable modems associated with each of the bandwidth allocation requests based on a respective mini-slot size ~~said requests in their unified form in accordance with a second set of constraints~~.

12-36. (Canceled)

37.   (New) The method of claim 11, further comprising:

segregating the physical upstream channel into multiple virtual upstream channels,

wherein each of the multiple virtual upstream channels is associated with a different

modulation and symbol rate.

38.   (New) The method of claim 37, further comprising:

grouping the cable modems into a plurality of groups; and

assigning one of the multiple virtual upstream channels to each of the plurality of

groups.

39.   (New) A method, comprising:

grouping cable modems into a plurality of groups; and

assigning a different virtual upstream channel to each of the plurality of groups,

wherein each virtual upstream channel is associated with a different modulation, symbol rate

or preamble.

40.   (New) The method of claim 39, wherein the cable modems are grouped into the

plurality of groups based on a latency associated with each of the plurality of groups.

41.   (New) The method of claim 39, further comprising:

differentiating slower cable modems from faster cable modems; and

assigning bandwidth to the cable modems based on the differentiation such that the

slower cable modems are allowed to transmit data proportionately more frequently than faster

cable modems.

42.   (New) The method of claim 39, further comprising:

sending a message on each of the different virtual upstream channels that allocates

upstream bandwidth.

43.   (New) The method of claim 42, wherein each message pertains to cable modems of a

group of the plurality of groups assigned to a respective virtual upstream channel.

44.   (New) The method of claim 39, wherein each virtual upstream channel is associated

with a different mini-slot size.

45.   (New) The method of claim 44, wherein a different modulation and symbol rate is

associated with each different virtual upstream channel and further comprising:

receiving bandwidth requests from multiple ones of the cable modems;

converting each bandwidth request into a mini-slot size based on the modulation and

symbol rate of the virtual upstream channel to which a respective cable modem is assigned;

and

scheduling each bandwidth request based on a respective mini-slot size.

46.   (New) A cable modem termination system (CMTS), comprising:

means for grouping cable modems into a plurality of groups; and

means for assigning a different virtual upstream channel to each of the plurality of

groups, wherein each virtual upstream channel is associated with a different modulation, symbol rate or preamble.

47.   (New) The system of claim 46, wherein the cable modems are grouped into the plurality of groups based on a latency associated with each of the plurality of groups.

48.   (New) The system of claim 46, further comprising:

      means for differentiating slower cable modems from faster cable modems; and

      means for assigning bandwidth to the cable modems based on the differentiation such that the slower cable modems are allowed to transmit data proportionately more frequently than faster cable modems.

49.   (New) The system of claim 46, further comprising:

      means for sending a message on each of the different virtual upstream channels that allocates upstream bandwidth.

50.   (New) The system of claim 49, wherein each message pertains to cable modems of a group of the plurality of groups assigned to a respective virtual upstream channel.

51.   (New) The system of claim 46, wherein each virtual upstream channel is associated with a different mini-slot size.

52.   (New) The system of claim 51, wherein a different modulation and symbol rate is associated with each different virtual upstream channel and further comprising:

means for receiving bandwidth requests from multiple ones of the cable modems;

means for converting each bandwidth request into a mini-slot size based on the modulation and symbol rate of the virtual upstream channel to which a respective cable modem is assigned; and

means for scheduling each bandwidth request based on a respective mini-slot size.